

ROZENTAL', A.Ya., inzh.

Installation and operation of arc quenching coils. Energ. i elektro-  
tekhn. prom. no.2:50-52 Ap-Je '64. (MIRA 17:10)

Rozenthal', A. Ya.

AID P - 2363

Subject : USSR/Electricity

Card 1/1 Pub. 27 - 27/30

Author : Rozental', A. Ya., Eng., Khar'kov

Title : Conference of the readers of the journal "Elektrichestvo" in Khar'kov (current events)

Periodical : Elektrichestvo, 5, 85-86, My 1955

Abstract : The conference took place on Ja 20, 1955. The local members of the All-Union Scientific Society of Power Engineers and Technicians and the members of the editorial staff of "Elektrichestvo" participated. Prof. A. M. Fedoseyev presented a report about the activity of the journal between 1950 and 1954. Several recommendations were discussed.

Institution: None

Submitted : No date

ROZENTAL', A.Ya. (g.Khar'kov)

Designation of phases in three-phase electrical equipment.  
(MIRA 7:12)  
Elektrichestvo no.1:82 Ja '55.  
(Electric engineering)

"APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001445620018-0

CLADKOV, I. (g.Tbilisi); ROZENTAL', B. (g.Tbilisi)

A high calling. Zhil.-kom. khoz. ll no.10:30 0 '61.

(MIRA 15:1)

(Tiflis--Hotels, taverns, etc.)

APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001445620018-0"

ROZENTAL<sup>1</sup>, D. prof.

Know your mother tongue. IUn.tekh 5 no.5:67-68 My '61.  
(MIRA 14:5)  
(Russian language--Clauses)

ROZENTAL', D.

v-11

USSR/Human and Animal Physiology - Neuro-Muscular  
Physiology.

Abs Jour : Ref Zhur - Biol., No 1, 1958, 4362

Author : D. Rozental' - V. Filippova

Inst : -  
Title : Excitability of the Muscles of Man During Sleep and  
Awakeness.

Orig Pub : Byull. eksperim. biol. i meditsiny, 1957, No 1,  
Suppl. 138-141

Abstract : Curves indicating the relationship between strain and  
time in the biceps muscle and the external flexor of  
the fingers were studied. The excitability oscilla-  
tions were evaluated on the basis of the dynamics of  
the long-term (constant b, rheobase) and short-term  
(constant a) excitability thresholds. Excitability  
changed relatively little during vigil. The maximal  
deviations, during one month, were +48 and -7% for a,

Card 1/2

"APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001445620018-0

KOKURIN, A.D.; ROZENTAL, D.A.; SUSLINA, V.P.; TISHINA, N..

Investigating the interaction of carbon dioxide with fuel carbon  
under dynamic conditions. Trudy LTI no.59:107-112 '61.  
(MIRA 17:9)

APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001445620018-0"

KOKURIN, A.D.; ROZENTAL', D.A.; YEVDOKIMOV, Yu.P.

Investigating the interaction of oxygen, carbon monoxide and  
carbon dioxide with charcoal under static conditions. Trudy  
LIT no.59:101-106 '61. (MIRA 17:9)

KOKURIN, A.D., ROZENTAL', D.A.

Reaction of oxygen with the carbon of the fuel. Trudy LTI no.51:46-  
51 '59. (MIRA 13:8)

(Oxygen) (Carbon)

ROZENTAL', D.A.; FILIPPENKO, A.I.

Effect of physicochemical parameters and catalysts on the oxidation rate of bitumen of the Ukhta oilfield. Zhur. prikl. khim. 37 no.11:2550 N '64 (MIRA 18:1)

L 42106-65 EPF(c)/EWT(m)/EWP(b)/T/EWP(t) Pr-4. IJP(c) ME/JD/JG  
ACCESSION NR: AT5008632 8/29/33/64/007/000/0192/0195 23

AUTHORS: Proskuryakov, V. A.; Rozental', D. A.; Vasil'yeva, G. M. 22

TITLE: Desulfurization of petroleum and petroleum products by oxidation.  
2. Desulfurization of benzene and kerosene fractions by atmospheric oxygen  
oxidation in an alkali medium B+/-

SOURCE: AN SSSR. Bashkirskiy filial. Khimiya seraorganicheskikh soyedineniy,  
soderzhashchikhsya v neftyakh i nefteproduktsakh, v. 7, 1964, 192-195

TOPIC TAGS: desulfurization, petroleum, benzene, kerosene, fraction, oxidation,  
catalyst, sodium hydroxide, alkali

ABSTRACT: Experiments were carried out to determine the optimum conditions for  
desulfurizing benzene and kerosene fractions from the Ural-Volga oil fields by  
oxidizing them in atmospheric oxygen and a water-alkali medium at high pressures  
and temperatures. The experiments were conducted in laboratory bubbling columns  
with perforated bottom vertical tubes. The first desulfurization was done with  
platforming type benzene 80-122C fractions. A great improvement was noticed in  
the desulfurization efficiency when using an alkali catalyst. The optimum

Card 1/2

L 42106-65

ACCESSION NR: AT5008632

conditions were: temperature 60°C, air flow one liter/minute, NaOH concentration 3%, alkali to benzene ratio 1:2, pressure 10 atm, and test duration 10 minutes. The second specimen was of a 150-200°C benzene fraction. The optimum conditions were: temperature 130°C, air flow one liter/minute, alkali concentrate 3%, alkali/benzene ratio 1:1, pressure 10 atm, and test duration time 10 minutes. Similar conditions were found for the 200-300°C fraction specimen. Orig. art. has 4 tables.

ASSOCIATION: Leningradskiy tekhnologicheskiy institut im. Lensoveta (Leningrad Technological Institute)

SUBMITTED: 00

ENCL: 00

SUB CODE: FP, GC

NO REF Sov: 000

OTHER: 003

Card 2/2 CC

L 43090-65 ENT(m)/EPF(c)/T Pr-4 ME  
ACCESSION NR: AR5006329

S/0081/65/000/001/2022/P022

16

B

SOURCE: Ref. zh. Khimiya, Abs. 1P162

AUTHOR: Proskuryakov, V.A.; Rozental', D.A.; Vasil'yeva, G.M.

TITLE: The problem of the oxidative desulfurization of the rectified fractions of sulfurous petroleums. Desulfurization of the rectified fractions of sulfurous petroleums by oxidation in an autoclave

CITED SOURCE: Tr. Leningr. tekhnol. in-ta im. Lensoveta, vyp. 63, 1964, 168-172

TOPIC TAGS: petroleum refining, desulfuration, oxidative desulfuration, sulfurous crude, organic sulfur, sulfur oxidation

TRANSLATION: These studies were carried out on high-sulfur crudes from Patos (Albania), on the > 200°C distillate of petroleum from Zol'nyy Ovrag, and on the 80-140, 140-200, 200-240 and 240-270°C fractions of the representative petroleum Vtoroy Baku from Romashkino. Oxidation was carried out with atmospheric O<sub>2</sub> in an alkaline medium under pressure; the temperature in the experiments fluctuated between 120 and 220°C, and the pressure, from 10 to 20 atmospheres. The results of these studies demonstrated the possibility of removing the S compounds from rectified petroleum fractions. The alkaline medium acts as

Can 1/2

L 43090-65  
ACCESSION NR: AR5006829

an inhibitor of the oxidation of the hydrocarbons in the fraction; at the same time, the S compounds of the fraction are bound by alkali after being transformed into the active form of quadrivalent and hexavalent S. The oxidation of the sulfoorganic compounds can be accelerated by the use of the catalyst  $\text{CuCl}_2 \cdot 2\text{H}_2\text{O}$ . Preliminary experiments, carried out with the 240-270C kerosene fraction of Romashkino petroleum, showed that the degree of desulfurization is significantly increased by this process, even when the temperature is decreased to 120C, while the physicochemical constants before and after the experiment are identical. However, oxidation in a rotating autoclave proceeds at an excessively slow speed due to the small reactive surface and the poor dispersion of the petroleum fraction in the aqueous solution of alkali. A. Nagatikina

SUB CODE: FP ENCL: 00

Am  
Card 2/2

KOKURIN, A.D.; ROZENTAL', D.A.

Effect of the height of the fuel bed on the reduction reaction  
of carbon dioxide. Trudy VNIIT no.10:121-127 '61. (MIRA 15:3)  
(Carbon dioxide)(Carbon monoxide)(Fuel)

KOKURIN, A.D.; ROZENTAL', D.A.

Effect of adsorption on the combustion and gasification of fuel  
carbon. Trudy VNIIT no.10:109-120 '61. (MIRA 15:3)  
(Adsorption)(Coal gasification)(Carbon oxides)

KOKURIN, A.D., ROZENTAL, D.A.

Reaction of carbon dioxide and carbon monoxide with the carbon of  
the fuel. Trudy LTI no. 51:52-57 '59. (MIRA 13:8)  
(Carbon dioxide) (Carbon monoxide) (Carbon)

ROZENTAL', D. A., CAND TECH SCI, "STUDY OF THE MECHANISM  
AND KINETICS OF THE PROCESSES OF COMBUSTION AND GASIFICATION  
OF SOLID FUEL." MOSCOW, 1961. (MIN OF HIGHER AND SEC SPEC  
ED RSFSR. MOSCOW ORDER OF LENIN CHEM-TECHNOL <sup>inst</sup> INST IM. D. I.  
MENDELEYEV). (KL, 2-61, 211).

ALEKSANDROV, V.Ya., prof.; BRODSKIY, V.Ya.; BRONSHTEYN, A.A.;  
BRUMBERG, Ye.M.; VAKHTIN, Yu.B.; VINNIKOV, Ya.A.;  
GAYTSKHOKI, V.S.; GOROSHCHENKO, Yu.L.; GULYAYEV, V.A.;  
ZHINKIN, L.N.; ZAVARZIN, A.A.; ZALKIND, S.Ya.; ZBARSKIY,  
I.B.; KATSNEL'SON, Z.S.; KOMISSARCHIK, Ya.Yu.; LEVIN, S.V.;  
MARAKHOVA, I.I.; MASHANSKIY, V.F.; MOSEVICH, T.N.; NIKOL'SKIY,  
N.N.; PESHKOV, M.A.; POLENOV, A.A.; POLYANSKIY, Yu.I.;  
ROZENTAL', D.L.; RUMYANTSEV, P.P.; TITOVA, L.K.; FEDIN, L.A.;  
KHEYGIN, Ye.M.; CHEENOGRYADSKAYA, N.A.; TROSHIN, A.S., otv.  
red.; MEYSEL', M.N., red.; MIKHAYLOV, V.P., red.; NEYFAKH,  
S.A., red.; PARIBOK, V.P., red.; POLYANSKIY, Yu.I., red.;  
RAYKOV, I.B., red.

[Manual on cytology in two volumes] Rukovodstvo po tsitologii v  
dvukh tomakh. Moskva, Nauka. Vol.1. 1965. 571 p.  
(MIRA 18:2)

1. Akademiya nauk SSSR. Institut tsitologii.

ROZENTAL', D. I.

FA 55/49To2

**USSR/Medicine - Muscles, Physiology  
Medicine - Drugs, Effect of**

Dec 48

"Contractures of the Transversely Striated Muscles  
Due to  $\text{CaCl}_2$ ,  $\text{MgCl}_2$ , and  $\text{BaCl}_2$ ", "D. I. Rozental",  
Div of Gen Morph, Inst of Experimental Med, Acad  
Med Sci USSR, 34 pp

**\*Dok Ak Nauk SSSR" Vol LXIII, No 5**

Tabulated experiments establish same operating  
principle for salts of bivalent  $\text{Ca}$ ,  $\text{Mg}$ , and  $\text{Ba}$   
cations as that governing monovalent  $\text{Na}$  and  $\text{K}$   
cations,  $\text{BaCl}_2$  either, high temperature and  
hypotonic, i.e. with a gradual increase of the

55/49T62

**USSR/Medicine - Muscles, Physiology  
(Contd)**

Dec 48

active agent in muscles there occurs first paraneurotic  
degeneration followed almost simultaneously by  
stimulation and refractivity. Submitted by Acad K. M.  
Bykov 14 Oct 48.

55/49T62

PA 35/49T61

**USSR/Medicine - Muscles, Contractions Dec 48**  
**Medicine - Drugs, Effects**

"Contractures of the Laterally Striated Muscles,  
 Caused by Quinine Hydrochloride," D. N. Nasonov,  
 Corr Mem, Acad Sci USSR, D. L. Rozental, Div  
 Gen Morph, Inst Experimental Med, Leningrad, 3 pp

"Dok Ak Nauk SSSR" Vol LXIII, No 6

Number of observers have established that during  
 the action of the most diverse irritants (ethyl  
 alcohol, ether, HCl, KCl, NaCl, CeCl<sub>2</sub>, MgCl<sub>2</sub>, BaCl<sub>2</sub>,  
 hypotonic media, high temperatures, etc.) on the  
 muscles, narcosis and stable excitation in the form  
 of contracture emerges, starting from exactly  
 35/49T61

**USSR/Medicine - Muscles, Contractions Dec 48**  
**(Contd)**

the same threshold dose, while signs of paranecrotic  
 changes of protoplasm appear even during the action  
 of subthreshold doses. Experimentally determines  
 that the action of quinine hydrochloride on  
 laterally striated frog muscles follows same  
 pattern. Submitted 14 Oct 48.

35/49T61

NASONOV, D.N.; ROZENTAL, D.L.

Against the so-called "all or nothing" rule in physiology. *Uspekhi*  
*Sovremennoy Biol.* 34, 161-93 '52. (MLRA 5:10)  
(CA 47 no.14:7069 '53)

NASONOV, D.N.; ROZENTAL', D.I.

Time factor in evaluation of tissue irritability. Fiziol. zh. SSSR  
39 no.4:405-422 July-Aug 1953. (CIML 25:1)

1. Leningrad.

NASONOV, D.N.; ROZENTAL', D.L.

More about the time factor in the evaluation of the irritability of tissues. Letter to the editor. Fiziol. zhur. 39 no.6:762 N-D '53.  
(MLRA 6:12)

(Tissues) (Nervous system)

USSR/Medicine - Physiology

FD-2715

Card 1/1 Pub. 33-24/28

Author : Nasonov, D. N.; Rozental', D. L., Leningrad

Title : Additional material on measuring the excitability of conductive tissues

Periodical : Fiziol. zhur. 41, 121-131, Jan-Feb 1955

Abstract : Present additional arguments to support authors' conclusions in the article "The Time Factor in Evaluating the Excitability of Tissue" (1953), where they state that the chronaxy cannot serve as a measure of the time for development of excitation and that the conclusions of researchers who have used chronaxy as a measure of the above value should be revised. Graphs. Twenty-one references, 10 of them USSR (8 since 1940)

Institution :

Submitted : May 19, 1954

NASONOV, D.N.; ROZENTAL', D.L.

Modification in the excitation of a nerve following its  
separation from the centers. Fiziol. zh. SSSR 42 no.1:78-87 Ja 56.  
(MIRA 9:5)

1. Laboratoriya obshchey fiziologii Zoologicheskogo instituta  
AN SSSR, Leningrad.  
(NERVES, physiology,  
irritability, eff. of separation (Rus))

ROZENTAL', D.L.; SHAPIRO, Ye.A.

Excitability of a nerve in the crab *Hyas coarctatus* induced by  
changing the distance between electrodes. Dokl. AN SSSR 108  
no.5:977-980 Je '56. (MLRA 9:10)

1. Zoologicheskiy institut Akademii nauk SSSR. Predstavлено академиком  
Ye.N. Pavlovskim.  
(CRABS) (ELECTROPHYSIOLOGY)

ROZENTAL', D.L.; FILIPPOVA, V.N.

Determining the excitability of human muscles. Biul.eksp.biol. i med. 43 no.1 supplement:132-138 '57. (MLRA 10:3)

1. Iz issledovatel'skoy gruppy pri deystvitel'nom chlene AMN SSSR prof. D.N.Masonove i Leningradkogo nauchno-issledovatel'skogo instituta travmatologii i ortopedii (nauchn. rukovoditel' - deystvitel'nyy chlen AMN SSSR prof. S.S.Girgolav) Predstavlena deystvitel'-nym chlenom AMN SSSR D.N.Masonovym.

(MUSCLES, physiol.  
excitability determ. in health & in dis.)

ROZENTAL', D.L.; FILIPPOVA, V.N.

Excitability of human muscles in sleep and wakefulness. Biul.eksp. biol. i med. 43 no.1 supplement:138-141 '57. (MIRA 10:3)

1. Iz issledovatel'skoy gruppy pri deystvitel'nom chlene AMN SSSR prof. D.N.Nasonove i Leningradskogo nauchno-issledovatel'skogo instituta travmatologii i ortopedii (nauchnyy rukovoditel' - deystvitel'nyy chlen AMN SSSR prof. S.S.Girgolav) Poredstavlena deystvitel'nym chlenom AMN SSSR S.S.Girgolavym.

(MUSCLES, physiol.  
excitability determ. i sleep & wakefulness)

ALEKSANDROV, Samuil Naumovich; ROZENTAL', Dora L'vovna; TROSHIN,  
A.S., otv. red.

[Spreading of the lesion in somatic muscle fibers] Ras-  
prostranenie povrezhdeniya v somaticheskikh myshechnykh  
voloknakh. Moskva, Nauka, 1965. 125 p. (MIRA 19:1)

ROZENTAL', D.I.; TRGSHIN, A.G.

New data on substantial changes due to cell damage and stimulation. TSitologiya 5 no.4:365-378 Jl-4g '63. (NIRA 17:8)

1. Laboratoriya fiziologii kletki Instituta tsitologii AN SSSR, Leningrad.

VERENINOV, A.A.; NIKOL'SKIY, N.N.; ROZENTAL<sup>1</sup>, D.L.

Distribution of neutral red between the giant axon of sepio and  
the medium. Trudy MOIP. Otd. biol. 9:24-26 '64.

(MIRA 18:1)

1. Institut tsitologii AN SSSR, Leningrad.

VERENINOV, A.A.; NIKOL'SKIY, N.N.; ROZENTAL', D.L.

Effect of alterations on the sorption of neutral red by the  
giant axon of the cuttlefish. TSitologija no.1:78-82 Ja-F'63  
(MIRA 16:6)

1. Laboratoriya fiziologii kletki Instituta tsitologii AN  
SSSR, Leningrad.  
(CEPHALOPODA) (CELLS) (SORPTION)  
(NEUTRALRED)

NASONOV, Dmitriy Nikolayevich; TROSHIN, A.S., *glav. red.*; GOLOVINA, N.V., *red.*; POLYANSKIY, Yu.I., *red.*; ROZENTAL', D.L., *red.*; STRELKOV, A.A., *red.*; VASIL'YEVA, Z.A., *red.izd-va*; VINOGRADOVA, N.F., *tekhn. red.*

[Some problems of cell morphology and physiology] Nekotorye voprosy morfologii i fiziologii kletki; izbraniye trudy. Moskva, Izd-vo AN SSSR, 1963. 361 p. (MIRA 16:12)  
(Cytology)

ROZENTAL, D. L. and FILATOVA, K. A.

"The Effect of the Initial Functional State on the Stainability of  
Rat Spinal Ganglia after Stimulation." pp. 64

Institute of Cytology AS USSR Laboratory of Cell Physiology

II Nauchnaya Konferentsiya Instituta Tsitologii AN SSSR. Tezisy Dokladov  
(Second Scientific Conference of the Institute of Cytology of the Academy  
of Sciences USSR, Abstracts of Reports), Leningrad, 1962 88 pp.

JPRS 20,634

ROZENTAL, D.L.; FILATOVA, K.A.

Effect of the original functional state on the staining capacity  
of spinal ganglia of rats under stimulation. Fiziol.zhur. 48  
no.12:1498-1503 D '62. (MIRA 16:2)

1. From the Laboratory of Cellular Physiology, U.S.S.R. Academy  
of Sciences Institute of Cytology, Leningrad.  
(NERVES) (ABSORPTION (PHYSIOLOGY))

VERENINOV, A.A.; NIKOL'SKIY, N.N.; ROZENTAL', D.L.

Distribution of neutral red between the giant axon of Sepia and the  
medium. TSitologiya 4 no.2:171-181 Mr-Ap '62. (MIRA 15:8)

1. Laboratoriya fiziologii kletki Instituta tsitologii AN SSSR,  
Leningrad.

(STAINS AND STAINING ( MICROSCOPY))

ROZENTAL', D.L.

Electrical mechanism of the irradiation of muscle tissue injury.  
Fiziol. zhur. 45 no.11:1348-1352 N '59. (MIRA 13:5)

1. From the U.S.S.R. Academy of Sciences Institute of Cytology,  
Leningrad.  
(MUSCLES wds. & inj.)

LEV, A.A.; NIKOL'SKIY, N.N.; ROZENTAL', D.L.; SHAPRIO, Ye.A.

Spreading of excitation in the giant nerve fiber of a Pacific squid.  
TSitologija 1 no.6:665-671 N-D '59. (MIRA 13:4)

1. Laboratoriya fiziologii kletki Instituta tsitologii AN SSSR,  
Leningrad.  
(NERVES) (ELECTROPHYSIOLOGY)

USSR/Human and Animal Physiology (Normal and Pathological).  
Nerve and Muscle Physiology.

T-11

Abs Jour : Ref Zhur - Biol., No 11, 1958, 51189

Author : Rozental', D.I., Fillipova, V.N.

Inst : -

Title : The Determination of Muscular Excitability in Man.

Orig Pub : Byul. eksperim. biol. i meditsiny, 1957, No 1, prilozheniye,  
132-138.

Abstract : The dynamics of short term ( $a$ -constant) and of long term  
( $b$ -constant) excitability thresholds were investigated in  
man, as well as of the chronaxy ( $Ch$ ) of intact and of pa-  
thologically modified muscles. A 1 cm<sup>2</sup> wide and 4 mm deep  
chlorinated silver cup, filled with cooton wool which was  
soaked in a 2 percent physiological agar solution, served  
as the stimulating electrode. Uniform moisture and pres-  
sure were maintained, as well as firm fixation of the elec-  
trode upon the location of motion. Each investigation

Card 1/2

LEV, A.A., ROZENTAL', D.L.

Sorption of vital stains by the spinal ganglia of the frog as affected by their functional state [with summary in English]. Biofizika 3 no.4:413-421 Jl-Ag '58 (MIRA 11:8)

1. Institut tsitologii AN SSSR, Leningrad.  
(STAINS AND STAINING (MICROSCOPY))  
(SPINAL CORD)

ROZENTAL', E.S., inzhener;

Development of some new installation accessories. Svetotekhnika  
3 no.6:48 Je '57. (MIRA 10:7)

1. Zavod "Elektrosvet."  
(Electric lighting)

ROZENTAL', E.S.

ZUSMAN, A.S., inzhener; ROZENTAL', E.S., inzhener.

New products for electric installations, Vest.elektroprom.28  
no.7:77-78 JI '57. (MLRA 10:9)

1. Zavod "Elektrosvet."  
(Electric apparatus and appliances)

Rozenthal' E.S.

AUTHORS: Zusman, A.S. (Engineer) and Rozental' E.S. (Engineer).

110-7-27/30

TITLE: New electrical fittings. (Novye elektroustanovochnye izdeliya).

PERIODICAL: "Vestnik Elektropromyshlennosti" (Journal of the Electrical Industry), Vol.28, No.7, 1957, pp.77-78 (USSR).

ABSTRACT: The Elektrosvet works has developed a series of new electrical fittings. These are made of new materials such as steatite, amino-plastics, and etched or nickel-plated brass. The article describes a number of fittings such as switch-sockets, push-button switches, plug-sockets with cover, a delay switch that leaves staircase lights on for a limited time, connecting boxes, lampholders with chain-operated switches, lighting fittings for refrigerators and others.

There are 8 figures.

ASSOCIATION: Elektrosvet works. (Zavod "Elektrosvet").

AVAILABLE:

Card 1/1

ROZENTAL', E.S., inzh.

Newly developed electrical fixtures. Svetotekhnika 8 no.11:  
28-30 N '62. (MIRA 15:10)

1. Vsesoyuznyy svetotekhnicheskiy institut.  
(Electric light fixtures)

ROZENTAL', E.S., inzh.

Certain accomplishments of the lighting equipment industry  
in the Hungarian People's Republic. Svetotekhnika 8 no.5:27-30  
My '62. (MIRA 15:6)

(Hungary--Electric equipment industry)  
(Hungary--Fluorescent lighting)

ANDREYEVA, V.V., inzh.; ROZENTAL', E.S., inzh.

Standards for plug and socket outlets with flat contactors.  
Elektrotehnika 36 no.8:46-49 Ag '64. (MIRA 17:9)

MUTSENEK, Karl Yanovich, kand. tekhn. nauk; ROZENTAL<sup>1</sup>, Emanuel<sup>1</sup>  
Zamulovich, inzh.; SUKHOV, I.V., red.; TELYASHOV, R.Kh.,  
red.izd-va; BELOGUROVA, I.A., tekhn. red.

[Use of magnetic methods in assembly work] Primenenie mag-  
nitnykh metodov pri sborke izdelii. Leningrad, 1963. 16 p.  
(Leningradskiy dom nauchno-tehnicheskoi propagandy. Obmen  
peredovym opyтом. Seriya: Mekhanicheskaya obrabotka metal-  
lov, no.11) (MIRA 16:11)  
(Magnetic fields--Industrial applications) (Metalwork)

ROZENTAL', F.A., kand.tekhn.nauk

Foreword. Trudy NIKFI no.2:3-7 '58. (MIRA 13:5)

1. Nauchnyy rukovoditel' laboratorii sushil'noy tekhniki Nauchno-  
issledovatel'skogo kinofotoinstituta.  
(Drying--Research) (Motion-picture photography--Films)

ROZENTAL', F.A.

Investigating heat and mass exchange of small gelatin  
particles. Trudy NIKFI no.2:22-36 '58. (MIRA 13:5)  
(Gelatin--Drying) (Heat--Transmission)

ROZENTAL', F.A.; VINOGRADOVA, N.A.; KOL'TSOV, Y.S.

Drying gelatin by the spray method. Trudy NIKFI no.2:  
62-72 '58.

(MIRA 13:5)

(Gelatin--Drying) (Atomization)

ROZENTAL', F.A.; VINOGRADOVA, N.A.; KOL'TSOV, V.S.

Intensifying the process of drying in festoon dryers.  
Trudy NIKFI no.2:101-112 '58. (MIRA 13:5)  
(Photographic emulsions--Drying)

ROZENTAL', F.A.

Intensification of gelatin drying in channel dryers. Trudy  
NIKFI no.2:144-151 '58. (MIRA 13:5)  
(Gelatin--Drying)

ROZENTAL', F.A.; VINOGRADOVA, N.A.

Drying of nuclear photographic materials. Trudy NIKFI  
no.2:156-169 '58. (MIRA 13:5)  
(Photography, Particle track) (Drying apparatus)

ROZENTAL', F.A.; BELOGORODSKIY, M.I.; ZASKUL'NIKOV, A.A.

New drying machine unit for nuclear photographic materials.  
Trud' NIKFI no.2:188-194 '58. (MIRA 13:5)  
(Photography, Particle track)  
(Drying apparatus)

ROZENTAL', F.A., kand.tekhn.nauk

Ways of improving drying processes in the photographic supplies  
industry. Khim.nauk i prom. 3 no.5:654-657 '58. (MIRA 11:11)

(Photography) (Drying)

ROZENTAL', F.A.; VINOGRADOVA, N.A.; BONDARCHUK, V.M.; PIDORCHENKO, V.F.

System for rapid drying of processed motion-picture films.  
Trudy NIKFI no.45:33-49 '62. (MIRA 15:9)  
(Motion-picture photography--Films) (Drying)

ROZENTAL', F.A.

Investigating the process of moisture vapor sorption by silica  
gel. Trudy NIKFI no.45:57-76 '62. (MIRA 15:9)  
(Drying) (Silica)

Fedorov, K. I.

\*Application of Polarization by Alternating Current to the Investigation of the Discharge of Metal Ions. B. V. Ershler and K. I. Borcunov (Trudy Soveshchaniya po Elektrokhimi 1950, 1953, 446-450). [In Russian]. The active resistance of an electrode of Zn amalgam in a soln. of a Zn salt in a supporting electrolyte, as measured by an A.C. bridge, consists of a term inversely proportional to the square root of the frequency ( $\omega$ ) and another term ( $R_{\text{rest}}$ ) independent of  $\omega$ ; these terms are connected with concentration and chem. polarization, resp. From measurements of  $R_{\text{rest}}$  the exchange current was calculated and was found to be proportional to the concentration of  $Zn^{+2}$  ions and to vary exponentially with the electrode potential, indicating that the slowest part of the exchange is the discharge of  $Zn^{+2}$  ions, which takes place with simultaneous transfer of two electrons. The rate of exchange also depends on the nature of the anion, whose accelerating action increases in the order  $SO_4^{2-} < Cl^- < NO_3^-$ . —G. V. E. T.

Ersler ①

Sant P.W.

ROZENTAL, I. A.

Birger, N. G., Veksler, V. I., Dobroshin, N. A., Zatsepin, G. I., Kurnosov, L. B.,  
Lindimov, S. L., Rozental, I. A., and Eridus, L. Kh. P. 826

The main results of a series of experiments (in which electron nuclear showers were discovered and investigated) which the authors have been working on for a number of years are presented. The electron nuclear showers originated at nuclear interactions of very high energies (from 10 eV and above) and also from the nuclear-cascade process in cosmic rays. These two phenomena make it possible to explain basically the whole picture of processes occurring in cosmic rays.

The I. N. Lebedev Inst. of Physics, Acad. of Sci., USSR  
May 23, 1949

SO: Journal of Experimental and Theoretical Physics, (USSR) 19, No. 9 (1949)

R O Z E N T A L , I . I .

X 001 - ente

62. ON FLUCTUATIONS IN COLLISIONS OF PARTICLES  
OF HIGH ENERGY. M.I.Podgoretskil, I.I.Rozental' and;  
D.S.Chernavskii.  
Zh. eksper. teor. fiz., Vol. 29, No. 3 (9), 298-303 (1955).  
In Russian.

On the basis of the Landau-Fermi statistical theory of  
production of particles in high-energy collisions, fluctuations  
in the number of particles and in the energies carried off by  
the particles are calculated.

530.45 : 639.18

b2(2)

Nu

8102 001

ROZENTAL', I. I.

USSR/Nuclear Physics - Cosmic Rays

11 Oct 51

"Nuclear-Cascade Process in Wide Atmospheric Cosmic-Ray Showers," I. I. Rozental', Phys Inst imeni Lebedev, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXX, No 5, pp 731-734

Derives theoretical formulas and graphs for the dependence of the various components of wide atm showers upon depth (from the limits of the atm).

Acknowledges the valuable advice of Acad D. V. Skobel'tsyn, Ye. L. Feynberg, and N. A. Dobrotin and the computational assistance of I. Sh. Zlatin. Concludes that expts contradict the assumption that at

221T81

each act very many particles with energy (greater than  $E^{1/2}$ ) are generated. Submitted 24 Aug 51 by Acad D. V. Skobel'tsyn.

221T81

ROZENTAL, I. L.

USSR/Nuclear Physics - Cosmic Radiation Jun 48  
Nuclear Physics - Particles

"The Nature of Narrow Atmospheric Showers," S. A.  
Kuchay, T. L. Rozental, Phys Inst imen P. N.  
Lebedev, Acad Sci USSR, 2<sup>1</sup>/<sub>4</sub> pp

"Dok Ak Nauk SSSR" Vol IX, No 9

Subject was first investigated by Alilhanyan (J of  
Phys, 9, 175, 1945) at sea level. Authors describe  
observations made at 3,860 meters, using twin-teles-  
cope method. Concludes that large quantities of  
light particles are present in narrow showers.  
Presence cannot be explained by cascade propagation

6/49T93

USSR/Nuclear Physics - Cosmic Radiation Jun 48  
(Contd)

or vapors in neighborhood of apparatus. Indicates  
occurrence of considerable electromagnetic reaction  
in narrow showers. Submitted 29 Apr 48.

PA 6/49 T93

6/49T93

ROZENTAL, I. L.

Chemical Abst.  
Vol. 48  
Apr. 10, 1954  
Nuclear Phenomena

Penetrating particles in broad atmospheric showers

G. I. Al'tern, S. A. Kuchal, and I. L. Rozental. *Doklady Akad. Nauk S.S.R.* 61, 17-9 (1958); *cf. C.P. 44, 8703; C.A. 53, 7891c.* — The penetrating particles issuing from cosmic-ray-induced showers were observed and measured with an app. consisting of 3 groups of counters (A, B, and C) config. 7 counters each and 1 group (D) config. either 1 or 7 counters. A, B, and C were placed around D, 100 cm apart. A, B, and C were shielded with 7-14 cm Pb on sides and bottom; the top was covered with a Pb layer whose thickness ( $d$ ) varied between 0 and 32 cm. The counters were so connected to an amplific. with a 3-microsec. recovery time that only coincidences of A, B, and C and of A, B, C, and D were registered. The no. of triple coincidences ( $\epsilon_3$ ) and the no. of quadruple coincidences registered with 1 ( $\epsilon_1$ ) and 7 ( $\epsilon_7$ ) counters in D are tabulated and graphed as functions of  $d$ . It was found that  $\epsilon_3$  varied according to the equation  $\log \epsilon_3 = 2.20 - 0.123d^{0.7}$ . From the amt. of increase of  $\epsilon_7/\epsilon_3$  with  $d$  it was concluded that the av. light-wt. penetrating particle was accompanied by a meson cloud having a d. of 180-200 particles per sq. m.

J. W. Lowenberg, Jr.

"APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001445620018-0

BROD, V. A., G.I., MITROVICH, I.V., MINOVICH, A.L.,  
ROMANTAL, I.I., VYKSLIK, V.V., ZIMOV, L.M.

Electro-ic-nuclear showers of cosmic rays and nuclear-chain process. (Work conducted at Physical Institute\* imeni Lebedev of Academy of Sciences USSR).

Journal Of Experimental and Theoretical Physics Vol. 18, No. 9, 28 Sept. 1949.

APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001445620018-0"

ROZENTAL', I. L.

USSR/Nuclear Physics - Cosmic Rays  
Spatial Distribution

Dec 49

"Applicability of Poisson's Law to the Spatial Distribution of Particles, and the Density Spectrum of Wide Atmospheric Showers," M. I. Podgoretskiy, I. L. Rozental', S. A. Slavatinskiy, Phys Inst imeni Lebedev, Acad Sci USSR, 6 pp

"Zhur Eksper i Teoret Fiz" Vol XIX, No 12 - p.1141-6

Experimentally shows that spatial distribution of particles in wide atmospheric showers of mean densities can be described in the first approximation by Poisson's law. Spectrum of wide atmospheric showers is measured. Submitted 18 Jul 49.

[REDACTED]

PA 152T81

PA-39/49T99

USSR/Nuclear Physics - Cosmic Radiation Apr 49

Nuclear Physics - Ionization Chamber

"Narrow Atmospheric Showers of Cosmic Ray  
Particles," M. V. Nezlin, I. I. Rozental,  
S. A. Slavatinskij, Phys Inst imeni P. N. Lebedev,  
Acad Sci USSR, 4 pp

"Dok Ak Nauk SSSR" Vol LXV, No 5.

p.641-4

Introduces data obtained from recording triple  
coincidences of impulses in the Pamir mountains  
in summer 1948, with screened (lead) and un-  
screened counters of the master group. Concludes  
that narrow showers consist of electrons,  
photons, and penetrating particles. From films

39/49T99

USSR/Nuclear Physics (Contd)

Apr 49

of shower in a Wilson chamber, it follows that  
these components enter into the composition of  
"special" showers, while the soft component has  
marked directivity. Thus, supposition that  
generation of narrow showers occurs in the same  
processes in which "special" showers are generated  
is true. These processes must be the source of  
the nonequilibrium soft component. Submitted  
by Acad D. V. Skobel'tsyn, 15 Feb 49.

39/49T99

ROZENTAL', I. L.

USSR/Nuclear Physics - Cosmic Rays  
Particles, Elementary

21 Nov 49

"Absorption Spectrum of Penetrating Particle Currents of Wide Atmospheric Showers in Cosmic Rays," G. T. Zatsepin, I. L. Rozental', S. A. Slavatinskiy, G. B. Khristiansen, L. A. Shvayev, Phys Inst imeni Lebedev, Acad Sci USSR, 3 pp

"Dok Ak Nauk SSSR" Vol LXIX, No 3 - p. 341-3

Employed usual method of variation of area of counters, connected in coincidence scheme, and method of variation of "coincidence multiples," to determine subject spectrum and clarify nature of penetrating particles. Submitted 22 Jul 1949 by Acad D. V. Skobel'tsyn.

158T76

USSR/Nuclear Physics - Cosmic Rays  
Showers Dec 49

155T48  
"Altitude Behavior of the Penetrating Component of  
Wide Atmospheric Showers of Cosmic Rays," G. T.  
Zatsepin, I. L. Rozental', S. A. Slavatinakly, Phys  
Inst imeni P. N. Lebedev, Acad Sci USSR, 4 pp

"Dok Ak Nauk SSSR" Vol LXIX, No 4 p.531-3

Gives results of observations conducted in summer  
1948 on Pamir at 3,860 and 4,700 meters. Number of  
coincidences per hour for various thicknesses of  
lead (0, 12, 20, 28, and 36 cm) was registered at  
both heights. Number of coincidences for 28 cm of

USSR/Nuclear Physics - Cosmic Rays  
(Contd.) Dec 49

Lead was approximately 1.9 at 3,860 meters and  
3.5 at 4,700 meters; for 36 cm of lead, there  
were no coincidences at 3,860 meters and 3.2 at  
4,700 meters. Submitted by Acad D. V. Skobel'-  
tsyn 22 Jul 49.

155T48

PI 175167

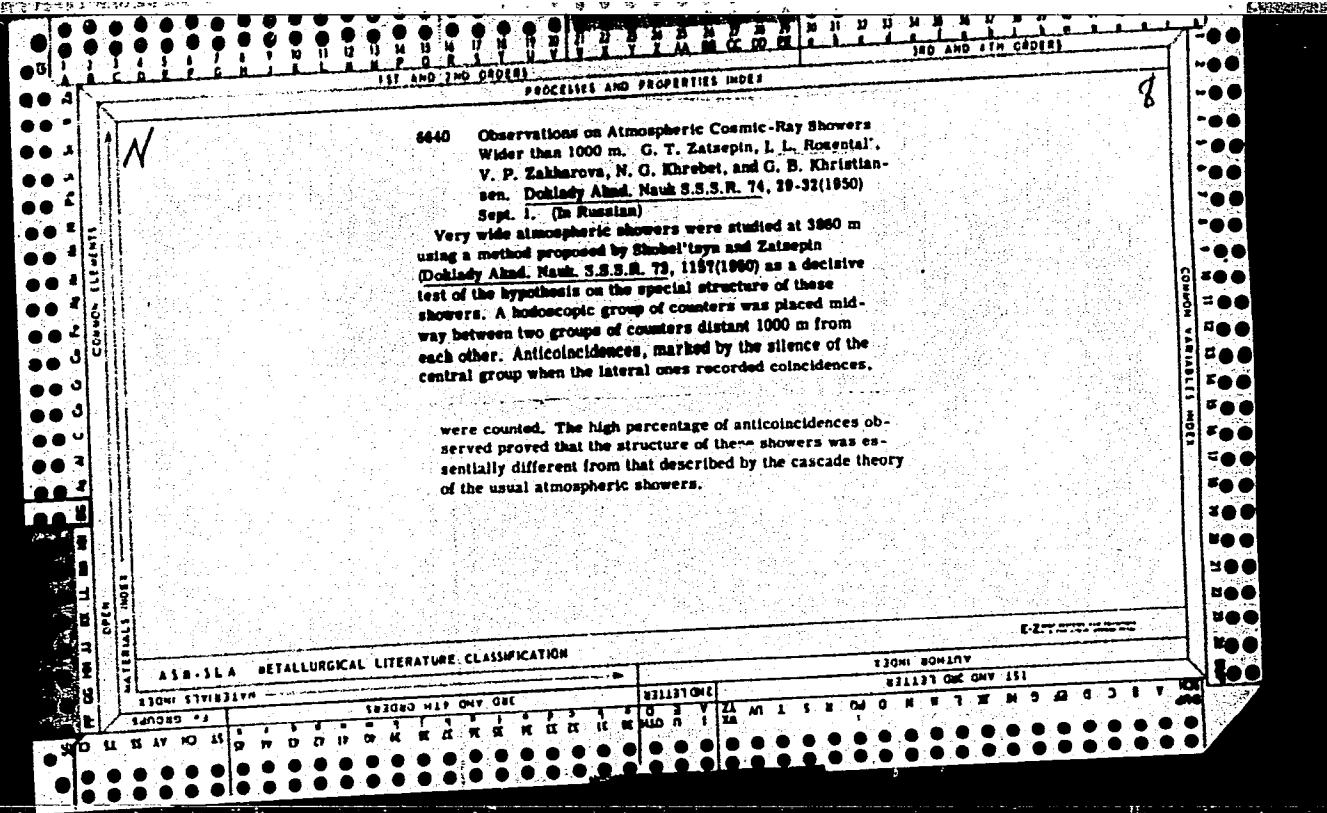
USSR/Nuclear Physics - Cosmic Rays  
Showers

21 Apr 50

"Relation Between Electron-Nuclear and Narrow Showers of Cosmic Rays,"  
S.A. Lubrevina, M. P. Piskov, I. L. Rozental', Phys Inst imeni Lebedev, Acad  
Sci USSR

"Dok Ak Nauk SSSR" Vol LXII, No 6, pp 1049-1052

Data used here was gathered in summer 1949 at alt of 3,860 m (vide "Zuhr  
Eksper i Teoret Fiz" 19, 826, 1949). First study was of influence of  
"counterflow" of particles in electron-nuclear showers from lead upon  
frequency of "wear of syste. of closely placed counters included in coin-  
cidence scheme. Second study was on comph of narrow showers for comparison  
of comph with that of electron-nuclear showers. Submitted 20 Feb 50  
by Acad D. V. skobel'tsyn.



ROZENTAL, I. I.

USSR/Nuclear Physics - Cosmic Rays

May 51

"Nonelectromagnetic Cascade Process in Cosmic Ray Showers," S. A. Azimov,  
M. I. Podgorets'kiy, I. L. Rosental, K. P. Ryzhskova, Phys Inst imeni Lebedev,  
Acad Sci USSR, and Physicotech Inst, Acad Sci Uzbek SSR

"Zhur Eksper i Teoret Fiz" Vol XXI, No 5, pp 574-9

Shows particles able to generate secondary showers enter compn of  
nonelectromagnetic showers of cosmic rays. Submitted 10 Jun 50.

183T80

ROZENTAL, I.L.

(2) *7/13/2001* S

Electronic-nuclear showers and nuclear cascade processes

N. G. Birger and I. L. Rozental, *Uspokhi Fiz. Nauk* 43, 104-12 (1951); cf. *C.A.* 46, 8088a. Since Powell (*C.A.* 45, 3733c) did not include the work of Russian physicists in his article entitled "Mesons," B. and R. present a short review of the work done on cosmic rays in the Soviet Union. The generation and compn. of electronic-nuclear showers is discussed, and their relation to broad atm. showers is described. A special section has been added on the decompr. of the  $\mu$ -meson. 31 references. J. Roytar-Leach

Chemical Abst.  
Vol. 78 No. 9  
May 10, 1954  
Nuclear Phenomena

8-27-54  
RMZ

ROZENTAL, I. L.

3321

ON THE NUCLEAR CASCADE PROCESS IN EXTENSIVE  
ATMOSPHERIC COSMIC-RAY SHOWERS. I. L. Rozental.

Doklady Akad. Nauk S.S.R. 80, 731-4(1951). (In Russian)

The distributions with atmospheric depth of components  
(nucleons,  $\pi$  and  $\mu$  mesons, and electrons) of extensive  
showers are calculated by nuclear-cascade theory and com-  
pared with experiment in an attempt to evaluate certain  
constants in the theory.

3X2

ROZENTAL', I. L.

USSR/Nuclear Physics - Cosmic Rays

Jan 52

"The Energy Spectrum of the Soft Nonequilibrium Component of Cosmic Rays," I. L. Rozental', Phys Inst imeni Lebedev, Acad Sci USSR

"Zhur Eksper i Teoret Fiz" Vol XII, No 1,  
pp 92-101

Computes the energy spectrum of shower electrons and photons formed as a result of cascade multiplication of particles in equilibrium with the component whose flight is comparable with that of the shower. It is established that the energy spectrum of nonequilibrium component is "softer" than the equilibrium spectrum of Tamm-Belen'kiy. In

204784

USSR/Nuclear Physics - Cosmic Rays

(Contd) Jan 52

particular, the nonequilibrium spectrum is computed for the case where the component forming the electrons consists of nuclear-active particles of high energy. Submitted 22 Mar 51.

204784

ROZENTAL, I. I.

USSR/Nuclear Physics - Cosmic Rays Feb 52

"Electron-Nuclear and Broad Atmospheric Showers of Cosmic Rays," Yu. V. Anishchenko,  
G. T. Zatsepin, I. L. Rozental, L. I. Sarycheva, Phys Inst imeni Lebedev, Acad Sci USSR

"Zhur Eksper i Teoret Fiz" Vol XXII, No 2, pp 143-151

Studies electron-nuclear showers. Concludes that such showers occur not only in heavy  
(Pb), but also in light elements (C). High-energy shower particles produce secondary  
showers, a proof of nuclear cascade processes (cf G. T. Zatsepin, "Dok Ak Nauk SSSR"  
Vol LXVII, 933, 1949). Density of beam of active nucleons is found proportional to  
density of electron beam. Indebted to Acad D. V. Skobeltsyn, Prof N. A. Dobrotin, G. B.  
Zhdanov, M. I. Podgoretskiy, Received 10 May 51

PA 207T99

Rozental, I. L.

CASCADE PROCESSES IN EXTENSIVE ATMOSPHERIC  
SHOWERS OF COSMIC RADIATION. I. L. Rozental (Phys.)

[ica Inst. Im. P. N. Lebedeva, Russia] Amer. Journ. Phys.  
Teoret. Fiz. 23, 440-455 (1952) Oct. (In Russian)

Calculations were made on the characteristics of nuclear  
cascadea generated at high energies. A comparison of  
calculated and observed path length of the different com-  
ponents of extensive atmospheric showers leads to a more  
accurate definition of the parameters of elementary events.  
The parameters are used for the calculation of the average  
quadratic radius and the spatial distribution of the com-  
ponents of extensive showers. There is satisfactory agree-  
ment of the calculated data with the experimental. (Dr. subb)

**U S S R**

537.591.15

6755. Nucleon interactions at high energies and extensive showers. G. T. ZATSEPIN, I. L. ROZENTAL, L. I. SARACHEVA, G. B. CHRISTIANSEN AND E. H. EDLUS. Izv. Akad. Nauk SSSR (Ser. Fiz.) 17, No. 1, 39-50 (1953). In Russian.

Summarizes the results of measurements on extensive air showers at 3860 m altitude. It is found that the particle density at a distance  $r$  from the shower core varies as  $r^{-n}$ , where  $2.7 < n < 3.1$ , for  $200 < r < 600 \text{ m}$ . The fraction of penetrating particles increases with  $r$  and reaches 25% at  $r \sim 600 \text{ m}$ . It is concluded that the integral energy spectrum of the primary radiation can be expressed as a power law with exponent between 1.6 and 1.8 for energies up to  $10^{11} \text{ eV}$ . See also Abstr. 8297 (1952). [Shortened version of Wataghin's summary (see Abstr. 5747 above) which contains 6 diagrams.] H. J. NIET

*Prob. 591*

R&Z EMPIRICAL, T.L.

U S S R

517.39.15  
5756. On the theory of nucleonic cascades and  
extensive showers. I. L. ROZENTAL. Izv. Akad.  
Nauk SSSR (Ser. Fiz.) 17, No. 1, 63-71 (1953). In  
Russian.

The theory given assumes multiple production in  
the collision of energetic nucleons. It also assumes  
that the interaction mean free path for energetic  
nucleons  $\approx$  the geometrical one (the value used is  
 $\sim 80 \text{ g/cm}^3$  in air) and that the cross-section of  
mesons with nuclei is also geometrical. The diffusion  
equations are written down and solved. Comparison  
with experiments indicates that the multiplicity in-  
creases with the energy of the primary particles, as  
 $n \sim E^\gamma$ , where  $\gamma \approx 4$  (as in Fermi's theory). It is  
concluded that this theory also gives a satisfactory  
description of the observed spatial distribution of  
particles in extensive showers [Abstr. 5555 (1953)].  
[Transcription of Wagnleitner's summary (see Abstr.  
5747 above).]

Printed 04/8

USSR/Nuclear Physics - Cosmic Rays

Feb 53

"Wide Atmospheric Showers of Cosmic Rays," N. A. Dobrotin, G. T. Zatsepin, I. L. Rozental, L. I. Sarycheva, G. B. Khristiansen, L. Kh. Eydus

Usp Fiz Nauk, Vol 49, No 2, pp 185-242

First showers were observed by D. V. Skobeltsyn in 1929 (Z. F. Physik, 54 (1929)) and later in 1949 he detected gigantic showers on Mt Pamir (3860m) (DAN 67 (1949)). G. T. Zatsepin developed the new theory of wide showers (DAN 67, 1949) followed by foreign scientists. 78 references, mostly American (18) appended. Indebted to Acad Skobel'tsyn, Ye. L. Feynberg, S. Z. Belenkiy, M. I. Pogoretskiy.

PA 251T57

ROZENTAL, I.  
USSR/Nuclear Physics - Mesons

FD-788

Card 1/1 Pub. 146-1/21

Author : Podgoretskiy, M. I. and Rozental, I. L.

Title : Some laws governing the decay of mesons into three particles

Periodical : Zhur. eksp. i teor. fiz., 27, 129-134, Aug 1954

Abstract : Results obtained by L. Michel (Proc. Phys. Soc. 63A (1950)) are generalized for a coordinate system bound to the primary particles. In relativistic and in extreme nonrelativistic cases the energy and the angular distribution of secondary particles are computed in laboratory coordinate system. The characteristics of angular distribution of noncomplanarity of pi-meson traces formed at decay of bound tau-particles are evaluated. Indebted to Ye. L. Feynberg. 4 references including 3 foreign.

Institution : Physics Institute imeni Lebedev, Acad Sci USSR

Submitted : November 4, 1953

ROZENTAL', I. L.

USSR/Physics

Card 1/2

Authors

: Rozental', I. L.; and Chernavskiy, D. S.

Title

: Theoretical and experimental data on the formation of particles at high energies.

Periodical

: Usp. Fiz. Nauk, 52, Ed. 2. 185 - 238, 1954

Abstract

: Report offers a review of experimental and theoretical data regarding the origination of particles at greater and especially ultra-greater energies ( $> 10^{10}$  ev). ( $> 10^{12}$  ev and up to  $10^{18}$  ev). The available data indicate the existence of many processes at high energies. The Heisenberg, Oppenheimer and associates and Fukuda theories contradict the experimental data regarding reaction at ultra-high energies. The Fermi and Landau theories show a uniform dependence of the multiplicity upon the energy of the primary particle but their angular and energy distributions of secondary particles are different. The angular distribution of particles, as presented by the Fermi theory, should not be conciliated with the spatial distribution of particles in wide atmospheric showers and the data obtained by means of photo plates.

Usp. Fiz. Nauk, 52, Ed. 2., 185 - 238, 1954

(additional card)

Card 2/2

Abstract : The Landau theory conforms, within the limits of its applicability, with all experimental data available at the present time. Fifty-seven references; 17 USSR since 1940; 40 German and English since 1936. Tables, graphs.

Institution : .....

Submitted : .....

Rozental', I. L.

USSR/Physics

Card 1/1 Pub. 118 - 2/8

Authors : Rozental', I. L.

Title : Relativistic transformation and the law of conservation of energy and impulse in connection with the application to some questions concerning the physics of cosmic rays

Periodical : Usu. fiz. nauk 54/3, 405-434, Nov 1954

Abstract : On the base of a law of conservation of energy and a law of conservation of impulses ( $\sum p = 0$ , where  $p$  is an impulse of the i-th particle of the system), a relativistic transformation of formulae expressing physical states of primary particles is presented. The article deals mainly with impacts of primary particles resulting in decomposition of the primary and formation of the secondary particles. Cases of decompositions into two particles and into three particles are analyzed. A list of symbols and their meanings is included. Nineteen references 8-USSR (1950-1954). Graphs; diagrams; drawings.

Institution: ...

Submitted : ...

ROZENTAL, I.L.

USSR/Physics - Nuclear physics

Card 1/1 Pub. 22 - 8/40

Authors : Zatsepir, G.T., and Rozental', I.L.

Title : Regarding the general theory of nuclear cascade process.

Periodical : Dok. AN SSSR 99/3, 369-372, Nov 21, 1954

Abstract : A theory on the nuclear cascade process is presented. It is based on the theory of successive collisions which had been worked out some time before. The theory of successive collisions, however, had been formulated only for cases when the particles formed had a mono-energetic spectrum. In the present article, the theory is generalized, i.e., it can be applied to cases where spectra of particles formed through collisions do not depend on energy. Nine references; 5-USSR (1949-1953).

Institution: Physical Institute im. P.N. Lebedev of the Acad. of Scs. of the USSR.

Presented by: Academician D.V. Skobel'tsin, May 5, 1954.

USSR/ Nuclear Physics - Cosmic rays

Card 1/1 Pub. 22 - 21/63

Authors : Rozental, I.L.

Title : On the space characteristics of the nuclear active component of broad showers of cosmic rays

Periodical : Dok. AN SSSR 99/5, 963-966, Dec 21, 1954

Abstract : A method of computing the space characteristic component of a cosmic ray collision with atoms of atmospheric gases is presented under the assumption that, particles generated by the collision may be of various energy. This is a generalization of another method used by the author in his earlier work where the generated (by a collision) particles were of the same energy. Twelve references; 8-USSR (1937-1954). Diagram.

Institution: The Physical Institute im. P.N. Lebedev of the Acad. of Scs. of the USSR

Presented by: Academician D.V. Skobel'tsin, August 5, 1954

PODGORETSKIY, M.I.; ROZENTAL', I.L.; CHERNAVSKIY, D.S.

Fluctuations in high-energy particle interactions. Izv.AN SSSR.  
Ser.fiz.19 ne.6:663 N-D '55. (MLRA 9:4)

1.Fizicheskiy institut imeni P.N.Lebedeva Akademii nauk SSSR.  
(Cosmic rays) (Nuclear physics)

FD-1897

USSR/Nuclear Physics - Particle formation  
ROZENTAL', I. L.  
Card 1/1 Pub. 146-17/21

Author : Rozental', I. L.

Title : Fermi's theory of multiple formation of particles during collisions of nucleons

Periodical : Zhur. eksp. i teor. fiz. 28, 118-120, January 1955

Abstract : In the calculation of the statistical weights of the various states, Fermi took in account the law of conservation of energy in an exact form, but the law of conservation of momentum in an approximate form. The purpose of the writer in the present work is to take into exact consideration the law of conservation of momentum for the two limiting cases: extremely nonrelativistic and extremely relativistic. He notes that J. Lepore and R. Stuart (Phys. Rev., 94, 1724, 1954) considered closely allied problems, soon after the completion of his work.

Institution: Physical Institute im. P. N. Lebedev, Academy of Sciences USSR

Submitted : September 7, 1954

ROZENTAL', I. L.

FD-2965

USSR/Nuclear Physics - Fluctuations during collisions

Card 1/2      Pub. 146 - 6/28

Author : Podgoretskiy, M. I.; Rozental', I. L.; Chernavskiy, D. S.

Title : Fluctuations during collision of particles of high energy

Periodical : Zhur. eksp. i teor. fiz., 29, September 1955, 296-303

Abstract : On the basis of the representations of the Fermi-Landau theory the authors calculate the fluctuations in the energy and number of particles during collision of nuclear-active particles of high energy. They conclude that the fluctuations in the number of particles are proportional to the square root of the number of particles and are quite considerable in absolute quantity; the coefficient of proportionality differs essentially for Fermi particles (nucleons-antinucleons) and for Bose particles (pi mesons). They show that the energy fluctuations able to be carried by one particle are very large and play a great role in the interpretation of the altitudinal behavior of wide atmospheric showers. The theoretical value of the coefficient of absorption thanks to taking into account fluctuations decreases, which improves the agreement between theory and experience. The authors thank S. Z. Belen'kii. Four references: e.g. I. L. Rozental',

Card 2/2

Pub. 146 - 6/28

FD-2965

Abstract : Usp. fiz. nauk, 54, 405, 1954; G. T. Zatsepin, L. I. Sarycheva,  
DAN SSSR, 99, 951, 1954.

Institution : Physical Institute im. P. N. Lebedev, Academy of Sciences USSR

Submitted : May 26, 1954

"APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001445620018-0

ROZENTAL, I. L.

4-2m

16

19

Annihilation of antinucleons with the formation of stars.  
S. Z. Belen'kii and I. L. Rozental. Soviet Phys. JETP 3,  
786-7 (1950) (English translation). See C A 50, 14382d  
B. M. R.

2

pmk  
mg

APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001445620018-0"

*Dokl. Akad. Nauk SSSR*  
ROZENTAL', I. L.; TER-MIKAELEYAN, M. L.; FEYNBERG, Ye. L.

On high-energy photon showers. Dokl. AN SSSR 103 no.4:581-584 Ag'55  
(MLRA 8:11)

1. Fizicheskiy institut imeni P.N. Lebedeva Akademii nauk SSSR. 2. Institut fiziki Akademii nauk Armenskoy SSR. Predstavлено akademikom D.V. Skobel'tsynym

(Photons)

Category : USSR/Nuclear Physics - Elementary Particles

C-3

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 451

Author : Belen'kiy, S.Ye. and Rozental', I. L.

Inst : Phys. Inst., USSR Acad. of Sciences

Title : On the Annihilation of Anti-Nucleons with Formation of Stars

Orig Pub : Zh. eksperim. i teor. fiziki, 1956, 30, No 3, 595-596

Abstract : The Fermi statistical theory is used to calculate the probability of formation of a different number of  $\pi$ -mesons during the annihilation of a slow anti-nucleon by a nucleon. The calculation results are given for cases when the isotopic spin is  $T=1$  and  $T=0$ . The most probable value is approximately 3 -- 4 at  $T=1$  and approximately 4 at  $T=0$ . The distribution of the formed mesons by charges is calculated and included in the article (for the case  $n > 3$ ).

Card : 1/1

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1575  
AUTHOR ROZENTAL', I.L.  
TITLE The Quasi-Onedimensional Interpretation of the Hydrodynamic  
Theory of the Multiple Production of Particles.  
PERIODICAL Žurn.eksp.i teor.fis., 31, fasc.2, 278-287 (1956)  
Issued: 10 / 1956

Here the dependence of the kinetic characteristics of the elementary act on the final temperature  $T_k$  is investigated. In this connection there arises the very difficult problem of taking into account the lateral crosswise motion of the liquid, and here an approximation which is different from that used by LANDAU is employed. When computing the energetic characteristics (or more accurately: the fourdimensional velocity  $u$ ) lateral emission is neglected completely (quasi-onedimensional approximation). It is of great importance to examine such domains of nuclear matter as carry away the main part of the energy (the so-called "anterior front"). The idea of further computations is based upon the fact that, in the case of a very high energy concentrated in the corresponding volume the transversal components of  $u$  are much smaller than the longitudinal ones. Therefore the energy of the particles is characterized nearly entirely by a onedimensional motion. Above all the limits of the applicability of the onedimensional solution must be determined. Next, the special cases of the anterior front and of the slowest particles are dealt with.

ROZENTAL, I. L.

✓ 0314. ON THE SPATIAL CHARACTERISTICS OF THE NUCLEAR-  
ACTIVE COMPONENT OF EXTENSIVE SHOWERS OF COSMIC RAYS

I.I. Rosental!

ZH. Tekhn. Nauk SSSR, Vol. 99, No. 6, 963-6 (1958). In Russian.

Radial distribution of the particles in extensive air showers is  
calculated, when the energy spectrum of secondary particles gener-  
ated in the collisions of primary particles with nuclei of the atmos-  
phere is taken into account.

G. Martell

637.591.10

RW  
MT

ROZENTHAL, I L

4  
J. L. ROSENTHAL

-5699

A QUASI-UNIDIMENSIONAL INTERPRETATION OF THE  
HYDRODYNAMIC THEORY OF MULTIPLE PARTICLE  
PRODUCTION<sup>1</sup> I. L. Rozenthal (Academy of Sciences, USSR).

Soviet Phys. JETP 4, 217-24(1957) March.

The hydrodynamic theory of multiple particle production developed by L. D. Landau is based on introducing two stages of liquid breakup—unidimensional motion and canonical breakup. The validity range of the second stage is exceedingly difficult to estimate. This work investigates a variant of hydrodynamic theory, in which only the unidimensional stage is considered. This variant is shown to give very good approximation for final temperatures  $T_k \sim 1.5$  to  $2\mu$ . At  $T_k \sim \mu$  the unidimensional approximation (particularly for slow secondary particles) gives a result that is merely of the right order of magnitude. The dependence of the fastest particle on  $T_k$  is also investigated. It turns out that the condition  $T_k \leq \mu$  must be satisfied for the calculated velocity to agree with the experimentally-observed one. This leads to the preliminary deduction that when  $T_k \sim \mu$ , the interaction cross section of the secondary particles (apparently pi-mesons) is of the same order of magnitude as the geometric cross section. (auth)

REC'D  
1  
B  
S  
R  
N  
W  
END

ROZENTAL, I.L.

56-4-4/52

## AUTHOR

MAKSIMENKO, V.M., ROZENTAL', I.L.,

## TITLE

Some Problems of the Statistical Theory of Plural Production of Particles.

(Nekotoryye voprosy statisticheskoy teorii mnozhestvennogo obrazonvaniya chasits - Russian)  
Zhurnal Eksperim.i Teoret.Fiziki, 1957, Vol 32, Nr 4, pp 658-666(U.S.S.R.)

## PERIODICAL

## ABSTRACT

Taking into account the laws of conservation of energy and of momentum, the paper under review computes the exact values of the statistical values of a system which consists of  $N$  particles of arbitrary masses. According to Fermi, the basic lines of the processes leading to plural production of particles are determined by statistical factors. This concept of the plural processes can be somewhat widened by taking into consideration the influence of the change of the matrix element. But this change has to be taken into account only very roughly, whereas the second, namely statistical, factor should be considered with as great accuracy as possible. As it is known, the statistical factor consists, in turn, of three factors. The first factor  $(V/8\pi^3 h^3)N!^{-1}$  ( $N$  denotes the number of particles) is determined by the volume  $V$  in the space of coordinates; the second factor is caused by the laws of conservation of angular momentum and of isotopic spin, and is computed with the aid of the usual rules of quantum mechanics; the third factor is the density of the states  $dQ_N(E_0)/dE_0 = W_N(E_0)$  in the space of momentum. The paper under review now aims at computing the exact value

Card 1/2

Rozental', I. L.

Milekhin, G.A.; Rozental', I.L.

Hydrodynamical interpretation of a characteristic of large showers recorded in photographic emulsions [with summary in English]. Zhur. eksp. i teor. fiz. 33 no.1:197-199 J1 '57. (MLRA 10:9)

1. Fizicheskiy institut im. P.M. Lebedeva Akademii nauk SSSR.  
(Cosmic rays)

MAKSIMENKO, V.M.; ROZENTAL', I.L.

Some problems related to the statistical theory of multiple  
production of particles. Zhur.eksp.i teor.fiz. 32 no.4:658-665  
(MIRA 10:7)  
Ap '57.  
(Quantum theory) (Statistical mechanics) (Particles, Elementary)